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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,171	12/02/2003	David B. Rogers	20030624-001B	4135

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SUD-CHEMIE INC.  
1600 WEST HILL STREET  
LOUISVILLE, KY 40210

EXAMINER
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NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/726,171

Applicant(s)

ROGERS ET AL.

Examiner

Cam N. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 9/11/06 (an amendment/response).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Response to Amendment

1. Applicants' amendments and remarks, filed on 09/11/06, have been made of record and entered. Claims 1, 5-7, & 9-12 have been amended. Claims 14-19 have been canceled.

Claims 1-13 are currently pending in this application.

### Claim Rejections - 35 USC § 102(e)

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 7, & 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Chettouf et al., "hereinafter Chettouf", (US 2004/0179995 A1).

Chettouf discloses a catalyst comprising titania carrier (see page 4, right hand column, claim 9). The catalyst comprises one or more metals or metal oxides selected from a group which includes lanthanum, platinum, rhenium, cerium, and zirconium (where cerium and zirconium can be the claimed additives) (see page 3, left hand column, paragraphs [0024] through [0027]). The titania having a surface area of between 20 and 250 m<sup>2</sup>/g, preferably between 30 and 80 m<sup>2</sup>/g (see page 3, paragraph [0022]). Chettouf further discloses that the

Art Unit: 1754

titania in the form of anatase, rutile as well as all kind of mixtures or intermediate may be used as a carrier (see page 1, paragraph [0011]).

No patentable distinction is seen between the claimed catalyst and that disclosed by Chettouf. Thus, the claims are anticipated by the reference.

**Claim Rejections - 35 USC § 102(b)**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 7-10, & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Speer (US Pat. 6,315,963 B1).

Speer discloses a photocatalyst, which comprised of TiO<sub>2</sub> doped with 1-5 wt.% platinum (Pt), 1-5 wt.% cerium (Ce), and 1-5 wt.% lanthanum (La), said TiO<sub>2</sub> comprised of at least 50% anatase titanium dioxide crystal with the balance either rutile and/or amorphous (see col. 12, claims 13-14). The photocatalyst is: (1) metallized with at least one metal from the group consisting of metals including Re and Mo; and/or (b) doped with at least one of the f-transition elements selected from the Lanthanide or Actinide series (see col. 12, claim 15). See also col. 9, ln 24-53, which discloses the TiO<sub>2</sub> having an anatase crystal structure, preferably 70-100%, with the balance of either rutile and/or amorphous.

It is considered the claims are anticipated by the teaching of Speer because he discloses that the TiO<sub>2</sub> comprised of at least 50% anatase, which provides for a TiO<sub>2</sub> having mainly an

Art Unit: 1754

anatase crystal structure, which meets the claimed requirement of “an anatase titanium dioxide support”.

As concern with claims 2, &10, the claimed La concentration is met by the teaching of the reference since the disclosed range falls within the claimed range (see above).

As concern with claims 8 & 13, the claimed additive concentration is met by the teaching of the reference since the disclosed range falls within the claimed range (see above). It is noted that minimum requirement for the concentration of the additive in the claims is “0” due the phrase “up to” without reciting any specific amount in the lower range.

**Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-6 & 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Speer (US Pat. 6,315,963 B1).

Speer discloses a photocatalyst as described above, except for the claimed Pt:Re concentrations and molar ratios.

It would have been *prima facie obvious* to one of ordinary skill in the art the time the invention was made to have optimized the amounts of Pt and Re in Speer in order to achieve an effective catalyst, in view of *In re Boesch*.

**Response to Applicants' Arguments**

8. Applicants' response filed on September 11, 2006 has been fully considered, but not deemed persuasive for the following reasons.

Applicants amended claim 1 including the limitation "wherein said titanium dioxide consists essentially of the anatase crystal structure..." is noted.

The "consists essentially of" language while limits the claim to specified ingredients or components and those that do not affect the basic and novel characteristics of a composition, when applicants contend that modifying components in the reference composition are excluded by the recitation of the "consists essentially of", applicants have the burden of showing the basic a novel characteristics of their composition, i.e., a showing that the introduction of these components would materially change the characteristics of applicants' composition. While applicants are excluding other metal component, such as titanium dioxide having rutile or amorphous crystal structure, etc. in the applied reference, applicants have not yet shown that the additional materials in the catalyst composition of the applied references are materially affect applicants' catalyst composition.

Applicants' urging regarding the '995 application to Chettouf et al. is not found persuasive because Chettouf clearly discloses the titania in the form of anatase, rutile as well as all kind of mixtures or intermediate may be used as a carrier (see Chettouf at page 1, paragraph [0011]).

Applicants further urged, that "the patent '963 to Speer does not teach or suggest the substrate could comprise titania or lanthanum-doped titania, or that the platinum, cerium or other metals could be supported on the titania or on a lanthanum-doped titania" (applicants' response

Art Unit: 1754

on page 6, first paragraph) is noted. It is considered Speer discloses the claimed catalyst as set forth in the rejection above. Speer specifically discloses a photocatalyst, which comprised of  $\text{TiO}_2$  doped with 1-5 wt.% platinum (Pt), 1-5 wt.% cerium (Ce), and 1-5 wt.% lanthanum (La), said  $\text{TiO}_2$  comprised of at least 50% anatase titanium dioxide crystal with the balance either rutile and/or amorphous (see Speer at col. 12, claims 13-14). At col. 9, ln 24-53, Speer further discloses the  $\text{TiO}_2$  having an anatase crystal structure, preferably 70-100%, with the balance of either rutile and/or amorphous. There is no patentable distinction seen between the claimed catalyst and that disclosed by Speer. Upon carefully reviewed of the reference, the claimed catalyst does not appear to be distinguished from the catalyst of the reference.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1754

**Conclusion**

10. Claims 1-13 are pending. Claims 1-13 are rejected. No claims are allowed.

**Contacts**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cam N Nguyen, whose telephone number is 571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cam N. Nguyen/

Nguyen/cnn

Primary Examiner

November 27, 2006

Art Unit: 1754